

## Annuities - pension plan

1. How many annuities will you obtain and for how long, if an annuity corresponds to 789.00 and every annuity is paid two times in one month. Further, you know that it is an ahead pension, you have budgeted of 135,250.64 and the financial institution offers you 1,8 % p. q and counts interest twenty four times in a year.

*(24 annuities, 10 years)*

2. Solve the previous example if all conditions are the same, except financial sources. Now let's have the available budgeted 136,000.00.

*(241 ordinary annuities,  $PV_{a242}=364.8989$ ,  $FV_{a142}=753.3527$ )*

3. How much sources do you need to provide a regular pension paid every two days (after payment). The pension corresponds to 10 USD and the pension plan is for 12 years. The pension fund gives you 3 % p. a. and the interest is calculated every 20 days.

*(18,140.47)*

4. Specify the amount you need for an infinite pension with regular annuity of 32,000.00, paid at the end of every month. You know that the interest rate corresponds to 2 % p. s. For the solution consider continuous interest with an identical impact on capital. After you estimate the budgeted provide a proof.

*(9,679,692.00)*

5. What amount of money you need to provide an infinite pension that will be paid at the beginning of every quarter. The financial institution offers you 0.7 % p.m. and calculates the interest twelve times a year. The amount of annuity is 47,000.00.

*( $B_0=6,761,286.00$ )*

6. Solve the previous example using the concept of continuous interest with the same impact on capital (use  $r_e$  and  $f$ ).

(...)

7. How much will be your pension paid monthly at the end of every month? The pension plan is estimated for ten years. When you are 25 you start to create over next 15 years a reserve for your pension.. The saving institution promises you 1 % p. s. with monthly interest period and you will save regularly annuity in the amount of 500 at the end of every quarter. After you finished your saving process you move your money to a pension fund. The pension fund will start paying you a retirement when you are 60. The fund guarantees you 3.7 % p. a. and the interest is calculated twice a year.

( $a=724.1746$ )

8. How many ordinary annuities can you provide with your pension plan and how much will be the last extraordinary annuity? For the pension plan you have a budget of 1,000,000.00, the financial institution promises you 3 % p. a. and calculates interest every two months and the pension is paid 3 times in a year. The pension in the amount of 32,000.00 is paid after.

*(37 annuities of 32,000.00 plus 1 extraordinary annuity  
( $PV_{a38}=14,851.45$ ,  $FV_{a38}=17,950.61$ )*